

REMARKS

At the time the present Final Office Action issued, claims 1 to 14 were pending. All claims presently stand rejected.

Consideration of references

Examiner is respectfully thanked for having considered the three search reports associated with International application No.s PCT/EP03/07787; PCT/EP03/07790; and PCT/EP03/08060.

Amendments

No amendments are presently made, but a full listing of the claims as pending has been included for Examiner's convenience.

With regard to an amendment made in our previous letter of 28 September 2006, the Examiner has diligently advised the Applicant that no amendment appears in amended Claim 1 that corresponds to an addition of "in a circumferential direction" (See Numbered paragraph 7 of the present Office Action). While this is acknowledged by the Applicant, Examiner's attention is kindly drawn to the previously presented addition of the phrase "said tubulars having at least one circumferentially non-planar tubular end" to Claim 1 (emphasis added).

Arguments

In Numbered paragraph 3 of the present Office Action, claims 1, 2, 4, 6, and 9-14 have been rejected under 35 USC § 103(a) as being unpatentable over Moe (US Pat. 4,736,084) taken with Liady (US Pat. 1,260,690).

The rejection states that Figure 1 and the discussion at columns 2-3 of the patent to Moe discloses a method of joining tubulars wherein a reducing gas is flushed around the heated tubular ends and the ends of the tubulars are forged welded. It is then acknowledged that the claims differ from Moe in calling for tubular ends with a non-planar shape, and more specifically with a sinusoidal or teethed shapes. The Office Action then alleges that this differences does not patentably distinguish over the prior art, because it would allegedly have been obvious to have provided the tubulars in Moe with the end shapes claimed, the motivation being the teachings of Liady that such are advantageous for welding tubulars (see Figures 1-4 in Liady).

Attorney for Applicant respectfully traverses the rejections.

In Numbered paragraph 7 of the Office Action, Examiner states to have considered the arguments previously presented on Applicant's behalf, but then makes unsupported and incorrect assertions leading to a finding of non-persuasiveness.

Attorney for Applicant has previously argued that it would not have been obvious for the person of ordinary skill in the art to use Liady's tubular end shapes on Moe's welding method, or more accurately stated, Attorney for Applicant has previously argued that no *prima facie* case of obviousness had been presented.

However, Numbered paragraph 7 is explaining that it would have been obvious to use the Moe end shapes with the welding method of Liady. Thus the Examiner seems to have responded to a totally different argument than the argument that was in fact presented.

Attorney for Applicant thus respectfully requests reconsideration of the arguments, bearing in mind the following facts:

Fact 1: Moe discloses that a variation in the gap width affects the uniformity of heating across the gap surfaces (Col. 3 lines 65 to 68). Moe teaches using radial variations in the gap width to give a more favorable current distribution across the two gap surfaces, so as to allow for a uniform and concentrated heating thereof. Also in Col 3 lines 44-53, the radial variation of gap width is taught to compensate for the preference of the electric current to flow in a straight line across the gap surfaces between the contacts such as to increase the uniformity of heating.

Fact 2: Liady discloses pipes with scallops formed with circular gullets and circular teeth of substantially the same arc described by the same radius (page 1 lines 42-45). As set forth in our previous letter, with graphical support, this necessarily results in a (strong) variation in gap width around the circumference of the tubes.

Therefore, to combine Moe with the teaching of Liady inherently goes against Moe's teaching. Moe's teaching is to apply radial variations in gap width to improve uniformity of heating (current distribution) by countering the natural tendency of the current to choose the shortest path between the electrodes. Liady's teaching necessarily introduces circumferential variations that clearly make the uniformity of current density - and heating - worse. As such, Liady necessarily goes against Moe's teaching and therefore it would not have been obvious to apply Moe in view of Liady.

Examiner seems to have wanted to suggest, in the last sentence of Numbered paragraph 7 in the Office Action, that the skilled person would have shaped Liady's teethed end surfaces to maintain the gap used in Moe's method. However, it is respectfully submitted that any circumferential corrugation in the end faces gives rise to variation in gap width in such a way that the current density, and thus the heating,

becomes less uniform. Thus modifying Moe using Liady would always go against Moe's teaching, and that is why the skilled person would have been deterred from combining Liady's teaching with Moe's.

In the present case, the advantages of using the toothed end surfaces of Liady do not weigh up to the fundamental problems that the same toothed end surfaces are expected to present when applied to Moe's welding technique that relies on gap width for uniform current distribution. This is particularly so, because Moe does not complain about the strength of the joints.

In conclusion, the person of ordinary skill in the art would not find sufficient motivation in the art to combine Moe with Liady, because the potential benefit of such combination is offset and outweighed by fundamental incompatibilities.

Thus, the Examiner has not established a *prima facie* case of obviousness, for lack of motivation to combine the cited references.

The Office Action also cites Moyer (US Pat. 2,719,207); Rothschild (US Pat. 2,497,631); Moe (US Pat. 5,721,413); and Hitz (2,998,646), but none of these have been applied to claim 1. It has been set forth in our earlier Response letter, sent 28 September 2006, that none of these references remedy the lack of motivation to combine Moe with Liady nor give rise to *prima facie* obviousness of claim 1 in any other way.

For these reasons, reconsideration, and ultimately withdrawal, of all the rejections is respectfully requested.

Concluding remarks

Attorney has addressed each and every ground for rejection raised by the Examiner in the Office Action, and believes that the present response brings the application in a state ready for allowance. Reconsideration is thus respectfully requested.

In the event the Examiner has any questions or issues regarding the present application, the Examiner is invited to call the undersigned prior to the issuance of any advisory action.

Respectfully submitted,

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